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## Get the Processor Speed in two simple ways

By Thomas Latuske

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Dev  
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Get the frequency of the processor either from the registry, or calculate it.

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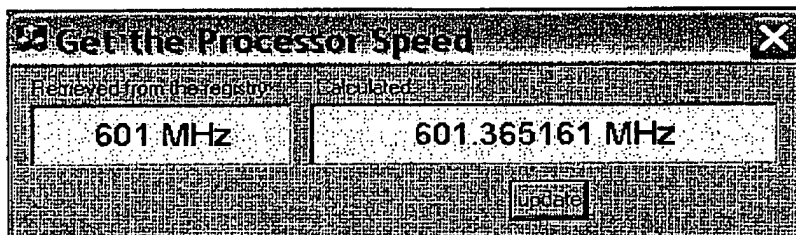
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### Introduction

I'll show you two ways to retrieve the processor-speed (**frequency in MHz**). W simple functions, one to retrieve the frequency from the registry of your Windo operating system, and one to calculate it with the clock cycles and a high resolu counter. If you want to use the function to calculate the speed (**frequency**), yc to use it with a Pentium Instruction set compatible processor (look at the lines t

rfmobile wrote in a message:

*You don't need to change the RDTSC definition for non-Intel processors. The code works as-is on my AMD mobile Athlon. Should work on any Pentium instruction set compatible processor but not for 486 or 386.*

I'm not able to verify this, so I would like to hear some feedback.

BTW: **Constructive** criticism is always welcome! :-)

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## Routine to retrieve the speed (frequency) from the reg

This is plain code to retrieve a registry value as a CString:

```
CString ProcSpeedRead()
{
    CString sMHz;
    char Buffer[_MAX_PATH];
    DWORD BufSize = _MAX_PATH;
    DWORD dwMHz = _MAX_PATH;
    HKEY hKey;

    // open the key where the proc speed is hidden:
    long lError = RegOpenKeyEx(HKEY_LOCAL_MACHINE,
        "HARDWARE\\DESCRIPTION\\System\\CentralProcessor\\",
        0,
        KEY_READ,
        &hKey);

    if (lError != ERROR_SUCCESS)
    {
        // if the key is not found, tell the user why:
        FormatMessage(FORMAT_MESSAGE_FROM_SYSTEM,
            NULL,
            lError,
            0,
            Buffer,
            _MAX_PATH,
            0);
        AfxMessageBox(Buffer);
        return "N/A";
    }

    // query the key:
    RegQueryValueEx(hKey, "-MHz", NULL, NULL, (LPBYTE) &dwMHz, &BufSi

    // convert the DWORD to a CString:
    sMHz.Format("%i", dwMHz);

    return sMHz;
}
```

## Routine to calculate the processor frequency in MHz:

Retrieve the frequency in MHz as a floating-point number. I use some well documented (at least for me ;-)) assembler here:

```
float CGettheProcessorSpeedDlg::ProcSpeedCalc()
{
    /*
    Rdtsc:
    It's the Pentium instruction "Read Time Stamp Counter". It measures the
    number of clock cycles that have passed since the processor was reset, as
    64-bit number. That's what the <CODE>_emit lines do.*/
    #define Rdtsc __asm _emit 0x0f __asm _emit 0x31

    // variables for the clock-cycles:
    __int64 cyclesStart = 0, cyclesStop = 0;
    // variables for the High-Res Performance Counter:
    unsigned __int64 nCtr = 0, nFreq = 0, nCtrStop = 0;
```

```

// retrieve performance-counter frequency per second:
if(!QueryPerformanceFrequency((LARGE_INTEGER *) &nFreq)) return 0;

// retrieve the current value of the performance counter:
QueryPerformanceCounter((LARGE_INTEGER *) &nCtrStop);

// add the frequency to the counter-value:
nCtrStop += nFreq;

_asm
{
    // retrieve the clock-cycles for the start value:
    RDTSC
    mov DWORD PTR cyclesStart, eax
    mov DWORD PTR [cyclesStart + 4], edx
}

do{
    // retrieve the value of the performance counter
    // until 1 sec has gone by:
    QueryPerformanceCounter((LARGE_INTEGER *) &nCtr);
}while (nCtr < nCtrStop);

_asm
{
    // retrieve again the clock-cycles after 1 sec. has gone by:
    RDTSC
    mov DWORD PTR cyclesStop, eax
    mov DWORD PTR [cyclesStop + 4], edx
}

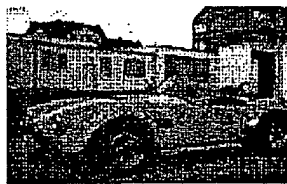
// stop-start is speed in Hz divided by 1,000,000 is speed in MHz
return ((float)cyclesStop-(float)cyclesStart) / 1000000;
}

```

## Credits

- I got the assembler some time ago from an assembler newsgroup
- ...and credits to all programmers out there who share their knowing!

## About Thomas Latuske



My name is Thomas, I'm born on January the 11th in 1970, right now I'm working in the Quality department of a big Pipe mill as a Technician. My hobbies are my girl friend, my car, RC-Planes and Computers. I begun with VC++ some time ago and now Programming is like a drug to me (I'm still a beginner). I want to learn it all in a blink of an eye 😊 but i know that this is not possible. It's real fun for me and I do small Programms for my own use. O.K. enough written..... I need my Time to debug everything that crosses my way! 😊

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 Re: Code will break soon... Thomas Latuske

15:04 8 Jun '04

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